Mitral Valve Prolapse Syndrome—Myth or Reality?

RONALD D. POLLACK, MD
Northridge, California

MITRAL VALVE PROLAPSE has been proposed as a cause of, or having significant association with, anxiety and other psychological symptoms. The concurrence of this cardiac anomaly with a wide range of psychological symptoms has been promoted by some authors to syndrome status. In this article I will review the medical literature that both suggests and refutes a clear association between mitral valve prolapse and psychiatric symptoms.

Definition of the Mitral Valve Prolapse Syndrome

Mitral valve prolapse was originally described by Reid[1] and Barlow[2] in 1961 and 1962, respectively. They defined it as auscultative findings of a nonejection click with or without a late systolic murmur, heard best at the heart's apex. Prolapse is confirmed by the classic picture seen in echocardiography (Figure 1). Several subsequent studies have suggested that symptoms of panic disorder (Table 1) are frequently associated with mitral valve prolapse.[3-5] This association between auscultative and echocardiographic signs, together with psychiatric symptoms, has come to be known as the mitral valve prolapse syndrome.

Mitral valve prolapse may be due to a number of diseases (Table 2). Because these conditions may be the origin of symptoms, which may also be features of anxiety, the mitral valve prolapse syndrome has been redefined as primary or idiopathic mitral valve prolapse associated with symptoms of panic disorder.

Studies That Support the Syndrome

Table 3 lists studies of patients referred to cardiac clinics because their physicians had discovered clicks on auscultation. The incidence of symptoms, which included atypical chest pain, palpitations and dyspnea, ranged from 70% to 80%. The methodologic problems in these studies include small population size, no controls are used, patients with primary and secondary mitral valve prolapse are grouped together and patients are preselected for being symptomatic.

Some researchers have studied psychiatric rather than cardiac clinic populations. Venkatesh examined 21 patients with panic disorder and found 7 (33%) to have mitral valve prolapse.[9] There was no control group in this study. Agoraphobia frequently develops in patients with panic disorder due to their progressively avoiding situations.[6] Kantor and co-workers examined 25 agoraphobic patients and found 11 (44%) to have mitral valve prolapse, whereas only 2 (9%) of 23 control subjects had it.[10]

Silverman and associates selected 68 consecutive patients with mitral valve prolapse from a private practice of four physicians in internal medicine.[11] For controls, 68 concurrent patients matched by age and sex to the group with mitral valve prolapse were selected. Both groups were evaluated for symptoms, which included chest pain, syncope, palpitations, dizziness and dyspnea. In all, 64 (94%) of the patients with valvular prolapse were symptomatic compared with 51 (75%) of the control subjects. Palpitations were present in 48 (71%) members of the group with valvular prolapse, compared with 23 (34%) of the controls. This study failed to distinguish between primary and secondary mitral valve prolapse.

Evidence Against the Mitral Valve Prolapse Syndrome

Hartman and colleagues studied 141 patients with mitral valve prolapse and found 22 (16%) to have panic disorder.[12] This compares with the general population rate of 4% to 7%.[13] A total of 103 adult relatives of 26 of the patients with mitral valve prolapse were studied and 33 (32%) had mitral valve prolapse. Of these, one (3%) had panic disorder. Two (3%) of the remaining relatives without mitral valve prolapse had panic disorder. These results show an expected high inheritance rate of valvular prolapse,[7] but fail to show any higher association of panic disorder in the relative group than in the general populations.

Uretsky studied 972 consecutive patients presenting to an adult general medical practice.[14] He broke this population down into two groups: patients with mitral valve prolapse (45) and patients without it (742 with medical disease and 184 "healthy"). He compared the prevalence of both atypical chest pain and neuropsychiatric symptoms in these two groups. Initial comparisons showed a significantly higher rate of symptoms for the patients with the prolapse.

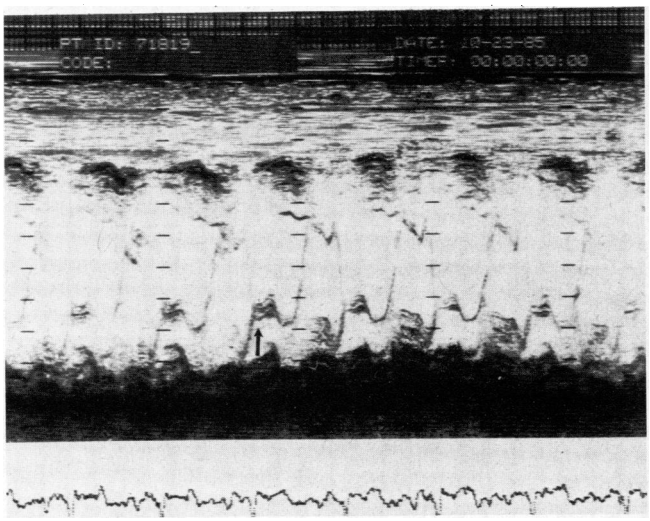

Figure 1.—Arrow indicates echocardiographic evidence of mitral valve prolapse (courtesy of Department of Cardiology, Northridge Hospital, Northridge, Calif).

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From the Department of Psychiatry in Family Medicine, Northridge Hospital Family Practice Program, Northridge, California.

Reprint requests to Ronald D. Pollack, MD, Chair, Department of Psychiatry in Family Medicine, Northridge Hospital Family Practice Program, 18406 Roscoe Blvd, Northridge, CA 91325.

The same abnormally high rate is found, however, in the subgroup of patients without mitral valve prolapse who were called "healthy." Uretsky concluded that these data suggest "a coincidence of a common syndrome with frequently occurring symptoms rather than cause and effect."[14]

The largest study examining this issue is the Framingham study.[15] Nearly 3,000 people in the general population were examined, and 208 were found to have echocardiographic evidence of mitral valve prolapse (an incidence of 6%). Subjects with and without prolapse were compared for symptoms of chest pain and dyspnea and no statistically significant difference between the two groups was found.

Discussion

Syndrome means "a running together." Signs and symptoms occur so frequently together as to be statistically significant. The research suggesting a mitral valve prolapse syndrome suffers in two major areas of design: (1) the low population sizes studied and (2) selection bias. The research that fails to show any link between psychiatric symptoms and mitral valve prolapse effectively deals with both of these variables. The study by Hartman and co-workers deals with selection bias by examining the families of patients with the prolapse.[12] Uretsky compares these patients with another preselected symptomatic group, "healthy" patients. The Framingham study removes the "patient" preselection variable altogether by doing a random sampling of a population.

The evidence presented here suggests that a syndrome linking mitral valve prolapse and psychiatric symptoms has not been established. Barlow and Pocock come close to concurring with this view.[16] In 1979 they agreed with Motulsky's conclusion that "for every patient with symptomatic mitral valve prolapse . . . there are hundreds of asymptomatic persons."[17] Barlow and Pocock recommend that asymptomatic patients who have mitral valve prolapse be left alone to minimize iatrogenic anxiety. They also state that symptomatic patients should be treated only when there is evidence of a potentially malignant arrhythmia.

Mitral valve prolapse syndrome continues to be cited in the medical literature as an explanation for various anxiety states.[18-21] These articles do not mention the research presented here that fails to support this view. This additional information should be considered to minimize the risk of iatrogenic disease and so that physicians will not be limited in their attempts to treat an anxious patient.

TABLE 1.—*Symptoms of Panic Disorder**

Dyspnea
Palpitations
Chest pain or discomfort
Choking or smothering sensation
Dizziness, vertigo or unsteady feelings
Feelings of unreality
Paresthesias (tingling in hands or feet)
Hot and cold flashes
Sweating
Faintness
Trembling or shaking

*From American Psychiatric Association.[6]

TABLE 2.—*Some Conditions That Cause or Are Closely Associated With Mitral Valve Prolapse**

Marfan's syndrome
Rheumatic endocarditis
Occlusive coronary artery disease
Congestive cardiomyopathy
Idiopathic hypertrophic subaortic stenosis
Myocarditis
Mitral valve operation
Trauma
Left ventricular aneurysm
Wolff-Parkinson-White syndrome
Systemic lupus erythematosus

*From Barlow and Pocock.[7]

TABLE 3.—*Cardiac Clinic Patients With Mitral Valve Syndrome*

Study	Population Size, Number	Patients Symptomatic, Percent
Hancock and Cohn, 1966[3]	40	75
Fontana et al, 1970[4]	30	70
Jeresaty, 1973[5]	100	80
Malcolm et al, 1976[8]	85	80

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